

August 11, 2021

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING**

August 6, 2021

Correspondence and media coverage of interest between July 21, 2021 and August 4, 2021

Media Coverage

Drought:

Date: August 5, 2021
Source: Mercury News
Article: Lake Oroville reaches all-time low level; hydroelectric plant shuts down for first time ever

Date: August 4, 2021
Source: Half Moon Bay Review
Article: Water agencies ask for cutbacks amid drought

Date: August 4, 2021
Source: Bay Area News Group
Article: California water: 10 charts and maps that explain the state's historic drought

Date: August 4, 2021
Source: Mercury News
Article: California drought: Lake Oroville at lowest levels since 1977

Date: August 2, 201
Source: Maven
Article: Monthly Reservoir Report for August 2, 2021

Date: July 28, 2021
Source: KQED
Article: San Jose Relies On Water From the Sierra Nevada. Climate Change is Challenging That System

Water Policy:

Date: August 4, 2021
Source: CNN
Article: California regulators vote to restrict water access for thousands of farmers amid severe drought

Date: August 3, 2021
Source: Maven
Press Release: State Water Board Approves Emergency Curtailment Measures For The Delta Watershed

Date: July 23, 2021
Source: Maven
Article: State Water Board Releases Draft Drought Emergency Regulation For Delta Watershed (Press Release and Draft Regulation)

Water Conservation:

Date: July 27, 2021
Source: Daily Journal
Article: Bay Area Water Supply and Conservation Agency shares tips on water conservation

Date: July 27, 2021
Source: KPIX
Article: Drought Depleting Bay Area Reservoirs, Driving Urgent Need For Conservation

Date: July 21, 2021
Source: Mercury News
Article: California drought: Here's how to use 15% less water

Water Management:

Date: August 4, 2021
Source: Associated Press
Article: Drought prompts California to halt some water diversions

Date: August 3, 2021
Source: Modesto Bee
Article: Does a state drought regulation threaten local water rights? MID, TID weigh in

Date: July 28, 2021
Source: Maven
Article: 'Adapt or We'll Break': A Water Expert Lays Out the West's risky Future in the Megadrought Era

Date: July 27, 2021
Source: Cal Matters
Article: Will Delta water users sue – again – to stop California's drought rules?

Water Infrastructure:

Date: July 28, 2021
Source: ABC 7 News
Article: Is desalination the answer to California's drought? Here's what experts say

Lake Oroville reaches all-time low level; hydroelectric plant shuts down for first time ever
Record dry conditions at tallest dam in United States highlight California drought
Mercury News | August 5, 2021 | Paul Rogers



Lake Oroville, the second largest reservoir in California, shown here July 22, 2021, is now just 24% full due to the extreme drought, its lowest level in history. State water officials say the hydroelectric plant at Oroville Dam will shut down in a matter of days because there is not enough water to run through its turbines. (Photo by Justin Sullivan/Getty Images)

Four years ago, Oroville Dam, the tallest in the United States, made international news when its massive 10-mile-long reservoir filled to the top in heavy winter storms, and raging waters destroyed its spillway, causing the emergency evacuation of 188,000 people.

But now, in the latest symbol of California's worsening drought, the opposite problem is underway: Lake Oroville's water level has fallen so low that on Thursday, for the first time since the dam was built in 1967, its power plant was shut down because there is no longer enough water to spin the turbines and generate electricity.

"This is just one of many unprecedented impacts we are experiencing in California as a result of our climate-induced drought," said Karla Nemeth, director of the state Department of Water Resources, which owns the dam.

On Thursday, the reservoir was only 24% full, having fallen below an all-time low record set in September 1977. The lake level has dropped a stunning 250 feet in the past two years. The

water level has fallen below the intake pipes that normally send water to spin six huge turbines at the Edward Hyatt Power Plant in the bedrock under the dam.

The loss of Oroville's electricity won't by itself cause blackouts. Even when the lake is full, the Hyatt power plant, one of the largest hydroelectric plants in the state, provides about 1% of California's peak statewide electricity demand.

But the problem illustrates a wider challenge facing California this year from the drought. Reservoirs are low all over.

And hydroelectricity is the state's second-largest source of power, providing about 15% of California's electricity each year. During the first four months this year, hydroelectric production in California fell 37% compared with the same time last year and 71% compared with 2019, according to the U.S. Department of Energy.

That power has to be made up to reduce the risk of blackouts.

"This is a huge problem. It's part of the big challenge we are facing this summer," said Severin Borenstein, co-director of the Energy Institute at the Haas School of Business at UC Berkeley.

The lost electricity can be replaced largely by increasing natural gas power plant production and importing electricity from other states, said Borenstein, who also serves on the board of the California Independent System Operator, which runs the state's power grid.

But as California increasingly moves to renewable energy to reduce climate change and air pollution, hydropower is more valuable than ever, he said. That's because as the sun goes down in the evening during hot summer months, solar energy drops. But people in the Central Valley, Southern California and other areas where temperatures regularly exceed 100 degrees continue to run air conditioners to keep cool.

If there are heat waves across the West, other states don't have much extra electricity to sell to California. Last year, during a record heat wave, the state experienced two blackouts, the first in 20 years.

Last Friday, hoping to avert any more power shutdowns, Gov. Gavin Newsom issued an emergency order that temporarily waives some air pollution rules to allow natural gas power plants to generate more electricity and pays industries \$2 a kilowatt-hour to reduce their electricity use during heat waves.

Many experts say hotter heat waves, wildfires that can destroy power lines, and shrinking reservoirs will be a regular part of California's future.

“We are in a new normal. The planning needs to accommodate that,” said Siva Gunda, a member of the California Energy Commission. “We’re not talking about climate change coming. It’s here.”

Gunda, a mechanical and aeronautical engineer who formerly worked as the research director at the UC Davis Energy Efficiency Institute, said he remains hopeful.

“I’m cautiously optimistic that we won’t have any blackouts this year,” he said. “We are working really hard to make sure we get through. But it’s going to be tight.”

The ultimate solution, Gunda and Borenstein said, is for the state to continue to work with private industry to build more battery facilities to store electricity from solar power during the day and release it on the grid when the sun goes down on hot nights. State regulators also are requiring utilities like PG&E to line up more contracts to provide electricity during extreme heat waves.

This summer, none of that will help Lake Oroville. Just two years ago, in June 2019 after a wet winter, the reservoir was 97% full.

But after the two-driest years since 1976-77, the state’s below-average winter snowpack didn’t melt and flow into reservoirs. Most of it simply soaked into the bone-dry Sierra ground. Now all but one of Oroville’s boat ramps are above the lake level. Environmentalists say the state should have planned better and not given so much water from Oroville and other reservoirs to senior water rights holders, like farmers in the Central Valley.

“This wasn’t just the result of drought,” said Doug Obegi, an attorney with the Natural Resources Defense Council in San Francisco. “It was the result of decisions to allocate unreasonable amounts of water despite the drought.”

John Yarbrough, assistant deputy director of the State Water Project, said planners at the state Department of Water Resources were shocked at how the snowpack runoff didn’t flow into reservoirs.

“This year was unique. We had lower than average snowpack,” he said. “And only 20% of it turned into runoff that went into the reservoirs. When people think of the impacts of climate change, that’s what we observed this year.”

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Water agencies ask for cutbacks amid drought

Half Moon Bay Review | August 4, 2021 | Sarah Wright

Local water agencies are asking residents on the San Mateo County coast to voluntarily reduce their water usage by 15 percent this summer as the state grapples with drought conditions.

So far, their recommendation is to bring down outdoor water use like irrigation as much as possible, but water agency leaders say conserving water now could make a difference in the future as the region faces its second drought year in a row.

“Every drop that is saved now is a drop that can be used later,” Montara Water and Sanitary District General Manager Clemens Heldmaier said.

MWSD is the only local water agency that is self-sufficient, relying entirely on local sources. The other two local agencies — Coastside County Water District and North Coast County Water District — both are member agencies of the Bay Area Water Supply and Conservation Agency. As such, they rely on water that’s piped in by the San Francisco Public Utilities District from the Sierra Nevada mountains and held and treated in large reservoirs across the state.

All three of the local districts are following Gov. Gavin Newsom’s July 8 executive order expanding the state emergency to San Mateo County. The order asks all Californians to reduce water use by 15 percent from 2020 levels.

BAWSCA Water Resources Manager Tom Francis said the statewide water shortage is severe, after the Sierra snowpack completely melted out by mid-June. Precipitation totals are the lowest since the historic 1977 drought. But even as many of Northern California’s reservoirs dip below 50 and even 25 percent of capacity, Hetch Hetchy’s supplies have remained relatively strong at 84 percent. With lower-than-average snowfall this year, the reservoir is lower than normal, but not as bad as some water sources elsewhere in the state.

Although it normally has some local sources to draw from, CCWD Water Resources Analyst Cathleen Brennan said the Half Moon Bay water district is currently relying entirely on imported water from SFPUC. Denniston Creek’s flows decreased early this year, cutting off CCWD’s access, and Pilarcitos Creek is a winter-only source for the water district. Although the SFPUC’s sources remain strong, Brennan said she knows just how quickly conditions can change if customers don’t take cutbacks seriously or if reservoirs aren’t replenished quickly enough.

“As a water district it’s not a comfortable place to be 100 percent reliant on SFPUC,” Brennan said.

Pacifica’s NCCWD, too, sources 100 percent of its potable water from SFPUC sources, including Hetch Hetchy.

This year, Coastside and Pacifica resources are not in crisis, and local agencies don't expect to issue additional cutbacks unless they come from the state. But all eyes are on the weather forecasts to see if conditions will improve.

"If we have a dry winter, next year is going to be a lot worse," Francis said.

Heldmaier said the current voluntary reduction is simply a constant for MWSD customers, who have always been asked to conserve water and cut unnecessary outdoor use. That's because when the district purchased the water system from a private company 16 years ago, it was required to set aside 50 percent of its capacity for drought conditions. To Heldmaier, much of the current drought discussion feels disingenuous because the statewide water supply really never recovered from 2016.

"This is not a new drought," Heldmaier said. "The past 50 years California has seen an increase in dry times. We've all seen reports and understand that California had been in a wetter period 150 years ago and its actual climate is more on the average side."

As for a regional solution to prepare for a drier climate and share resources across the state? It's not as simple as trucking water from one place to another, Heldmaier said. That's caused some regions to rely too heavily on water imports, which are not sustainable. But Coastsiders who conserve water during drought, even when local water supplies are stable, can help other regions that will be forced to purchase water.

"The reality is next year might be significantly worse," Francis said.

There are a number of local solutions that BAWSCA and each of the local agencies are exploring, from retreating wastewater to make it potable instead of discharging it into waterways to installing graywater systems in new homes. CCWD is always looking for local sources, Brennan said, but the agency has come up relatively dry so far and faces limited storage options.

"Everybody is doing their part to try to improve the water system and find alternative sources," Brennan said.

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California water: 10 charts and maps that explain the state's historic drought

California is facing its most severe drought in nearly 50 years. Here's why

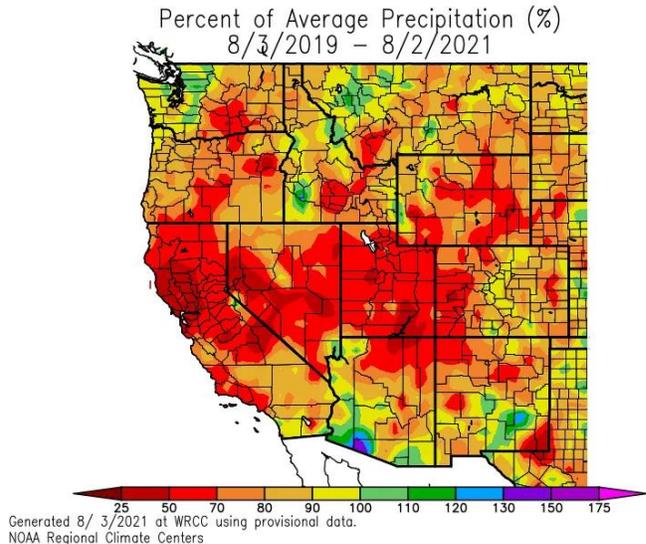
Bay Area News Group | August 4, 2021 | Paul Rogers

A historic drought is spreading across California and much of the American West. How bad is it? Which places are most affected? What does it mean for our water supply and wildfire risk?

These 10 maps and charts tell the story. Click on each image to enlarge.

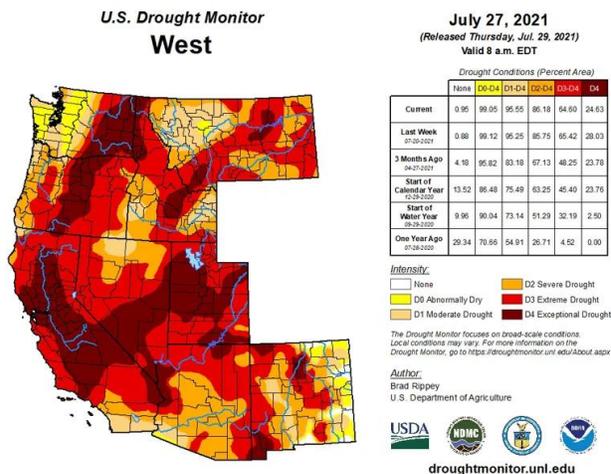
1) Two-year precipitation

Over the past two years, rain and snow totals in Northern California, Nevada, Utah and other parts of the West have been less than 50% of average. As this map from the [Western Regional Climate Center](#) in Reno shows, the drought is severe and widespread.



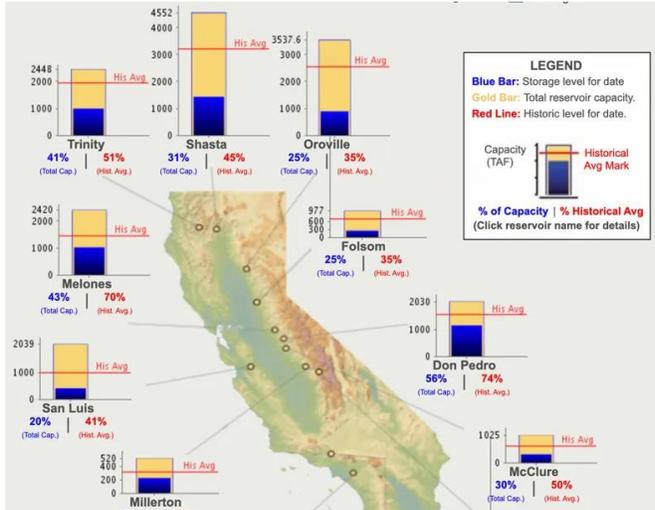
2) Drought monitor

Overall, 64% of the West was in “extreme” or “exceptional” drought at the end of July, up from just 4% a year ago. In California, 88% of the land was in “extreme” or “exceptional” drought, up from 3% a year ago, according to the U.S. Drought Monitor.



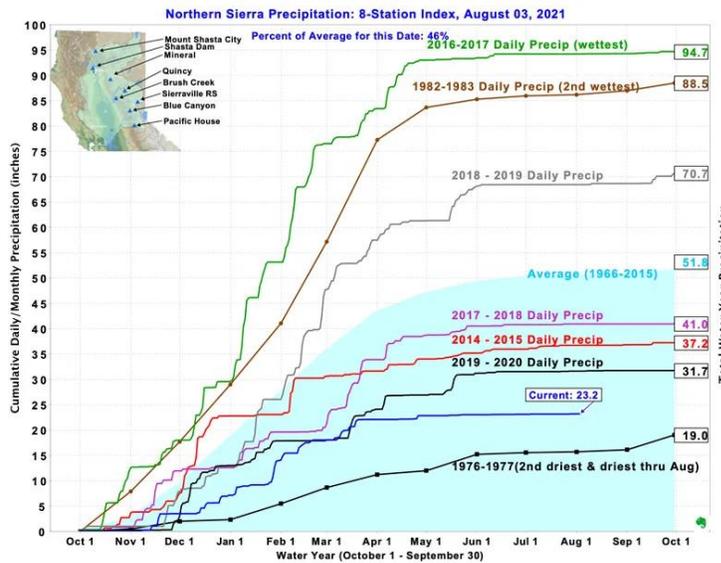
3) Major reservoir levels

With so little rain and snow over the past two years, California's major reservoirs are at levels well below normal. At the beginning of August, the largest, Shasta Lake, was just 31% full. The second largest, Lake Oroville, was 25% full, according to the state Department of Water Resources.



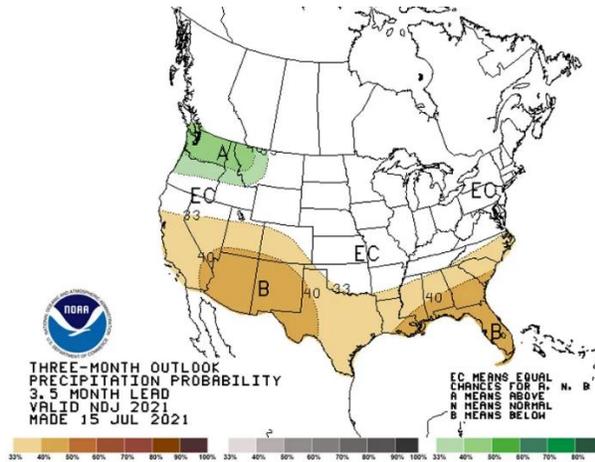
4) Northern Sierra precipitation

Less rain and snow fell in the Northern Sierra this winter than in any year since 1976-77. Most of the state's largest reservoirs — which provide water to millions of people from the Bay Area to San Diego — are located in Northern Sierra watersheds, and rely on rain and melting snow to be filled.



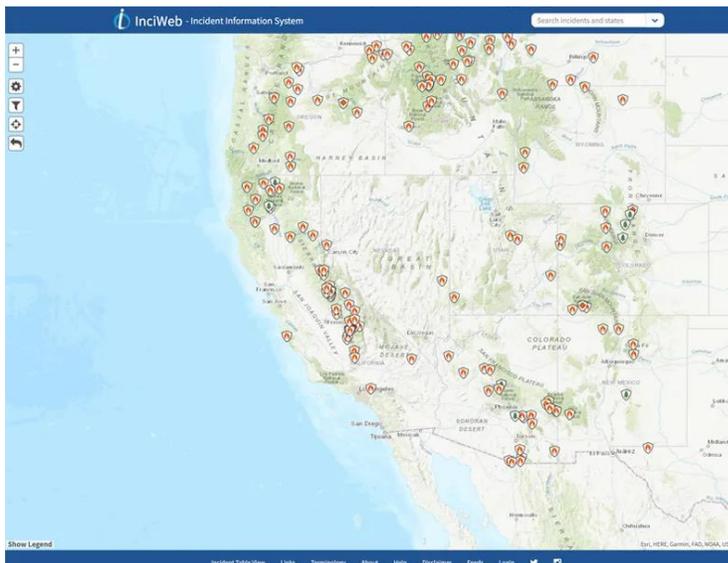
5) Winter precipitation outlook

NOAA, the National Oceanic and Atmospheric Administration, issues long-range outlooks based on computer modeling, ocean temperatures and other factors. The latest outlook isn't encouraging. It shows a slightly below-average chance of normal rainfall for most of California in November, December and January, typically the start of the winter rainy season.



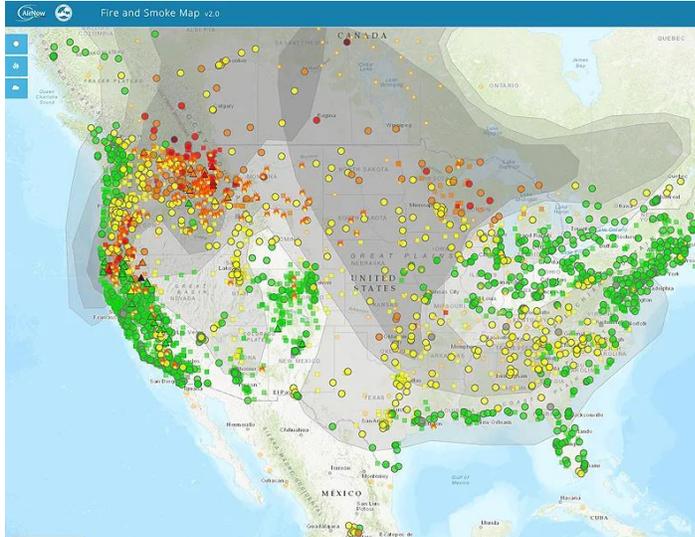
6) Current wildfires

Dry weather causes low moisture levels in grasses, brush and trees, which makes wildfires burn faster and more dangerously. InciWeb, a mapping system originally developed by the U.S. Forest Service, updates the location, size and other details of major wildfires.



7) EPA fire and smoke map

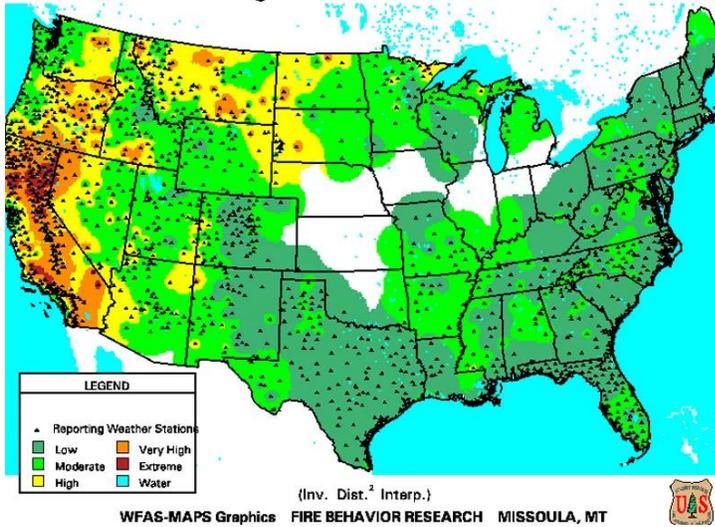
Big wildfires emit massive amounts of smoke, which can drift for hundreds, sometimes even thousands of miles, endangering human health. The U.S. Environmental Protection Agency maintains a map that shows air quality and smoke direction from major fires in real time.



8) US Forest Service fire danger rating

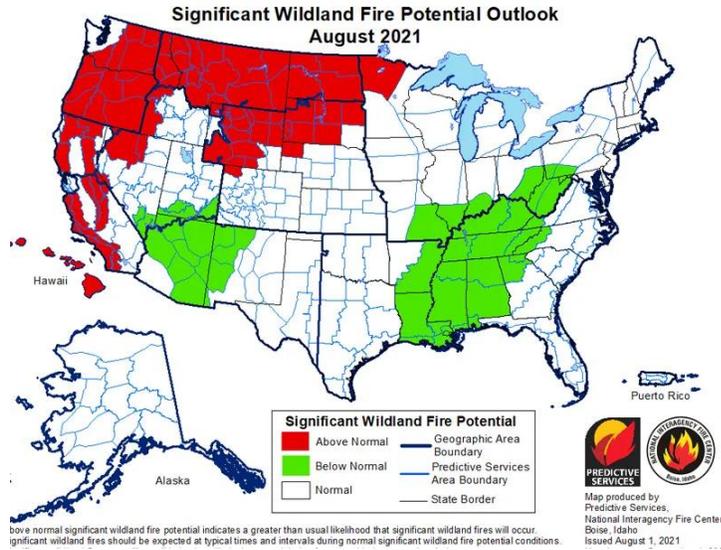
Usually, the most dangerous time for wildfires in California occurs in October or November, when winds pick up and vegetation is driest just before the first significant winter rains arrive. The U.S. Forest Service issues a daily fire danger map. Vegetation is so dry this year in California that fire scientists say conditions now are similar to a typical October.

Forecast Fire Danger Class: 04-AUG-21



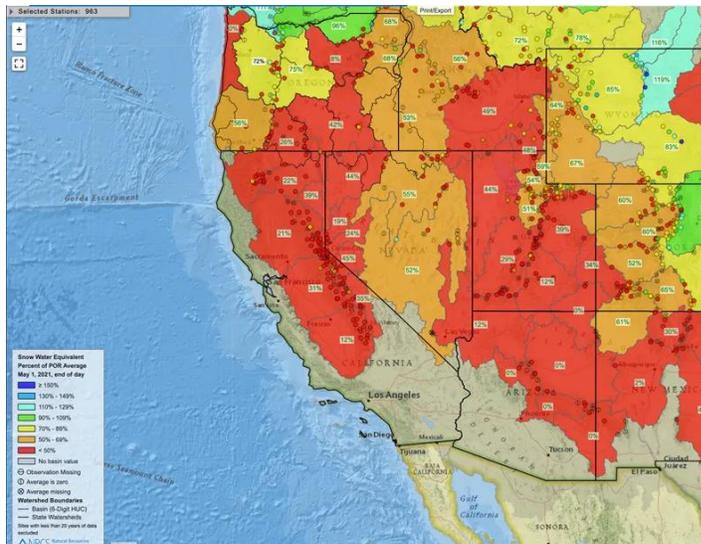
9) Wildland fire potential

The month ahead will bring above-normal fire risk for much of California and the West due to the drought, according to the National Interagency Fire Center in Boise. Parts of the Southwest, including Arizona, saw rains in late July, reducing their risk of fires in August.



10) Sierra Nevada snowpack

Nearly one-third of California’s water supply for cities and farms comes from the Sierra Nevada snowpack. This year on April 1, the snowpack was 59% of its historical average. But hot weather caused it to melt to just 22% of average by May 1, as this USDA map shows. Due to dry conditions, much of the water soaked into the soil and didn’t run into reservoirs.

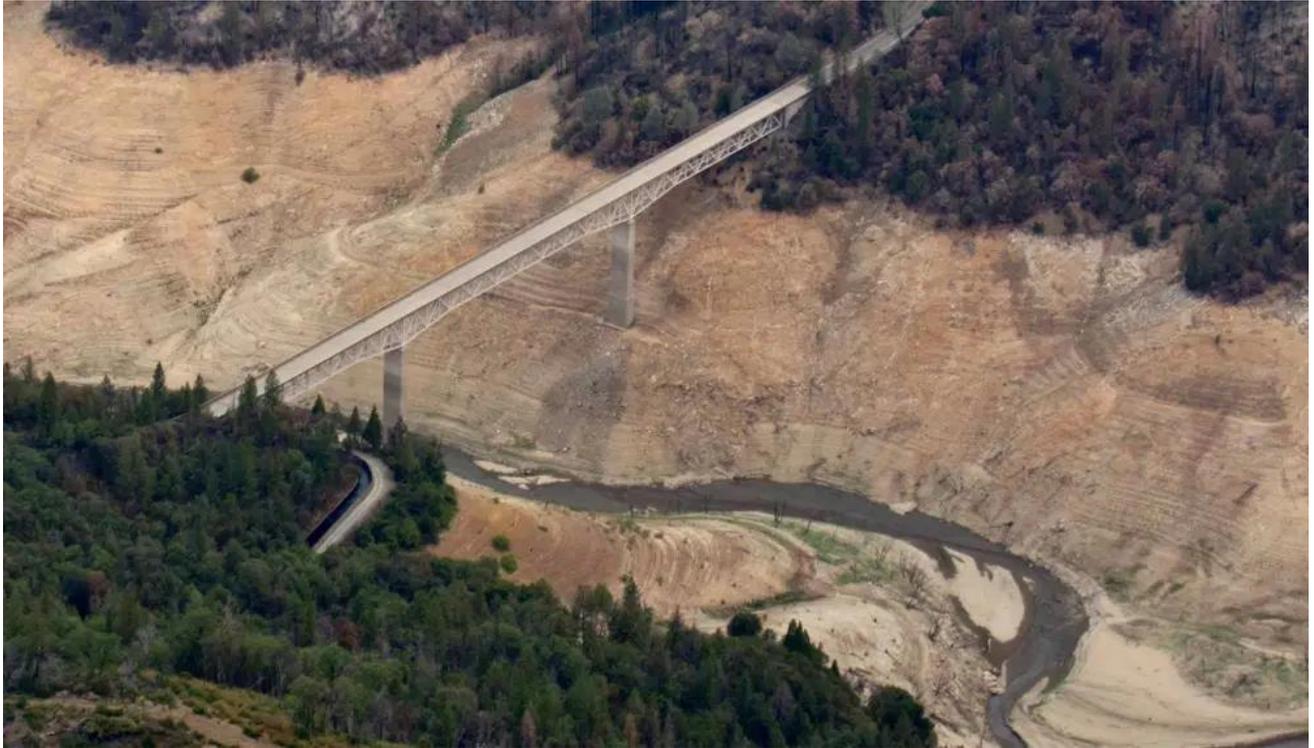


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California drought: Lake Oroville at lowest levels since 1977

Mercury News | August 4, 2021 | Patrick Perron



Water levels below the Enterprise Bridge above Lake Oroville have become extremely low and sediment shelves have begun to appear in parts of the water. The water levels are shown from an aerial view Saturday. (Gonzalo Curiel — Contributed)

OROVILLE — Lake Oroville reached the lowest levels since September 1977, measuring 643.5 feet above sea level at 10 a.m. Tuesday. For comparison, when Lake Oroville is full, the surface water level is 900 feet above sea level.

Increasing issues are arising from the low levels being seen at Lake Oroville. Water operations manager for the Department of Water Resources State Water Project Molly White said last week in an email that due to the falling lake levels, the Edward Hyatt Power Plant may be forced to close down for the first time in its history due to low lake elevation.

White added that due the levels expected, the power plant is likely to lose power generation capabilities in early August as the power plant cannot generate power once the lake's surface level falls below approximately 630-640 feet above sea level due to a lack of sufficient water to turn the plant's hydropower turbines.

The most recent time the Edward Hyatt Power Plant saw a shutdown was in 2015 when the Unit 1 turbine was shut down for refurbishment, which included a shut down during the spillway crisis. The turbine has been fully recommissioned for use since, White said.

Only precipitation events later this year will determine when lake levels will begin to rise, according to White.

Other potential affects are a local rivers which rely on a river valve outlet system at the base of the Oroville Dam that releases water from the base to maintain river temperature requirements. The river valve outlet system also maintains outflows to the Feather River if the Hyatt Power Plant's "hydropower penstocks are unavailable," White said. The river valve outlet system has been in use over summer months in 2021 due to drought conditions.

Currently Southern California water agencies are receiving water from other sources including the State Water Project, who's water is stored in the San Luis Reservoir from previous wet winters.

A month to month look at the Lake Oroville storage estimates for 2021 can be found by visiting <https://bit.ly/3BYbF9F>.

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Monthly Reservoir Report for August 2, 2021

Maven | August 2, 2021 | Robert Shibatani, Department of Water Resources

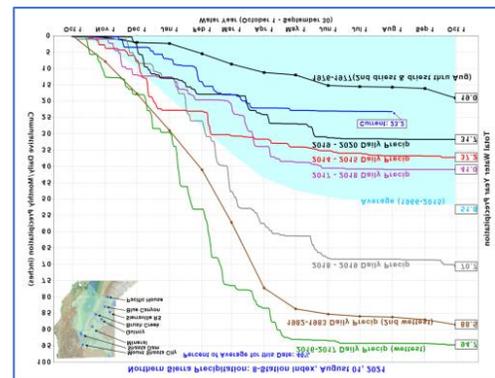
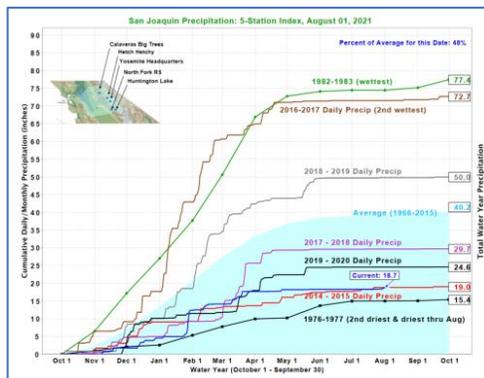
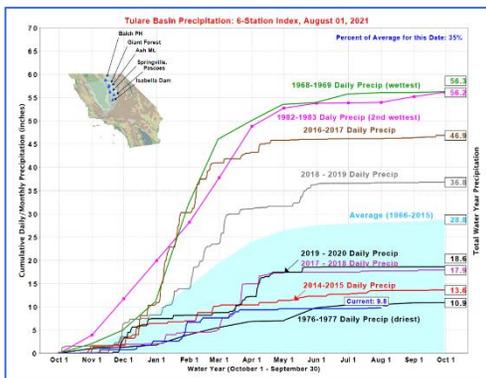
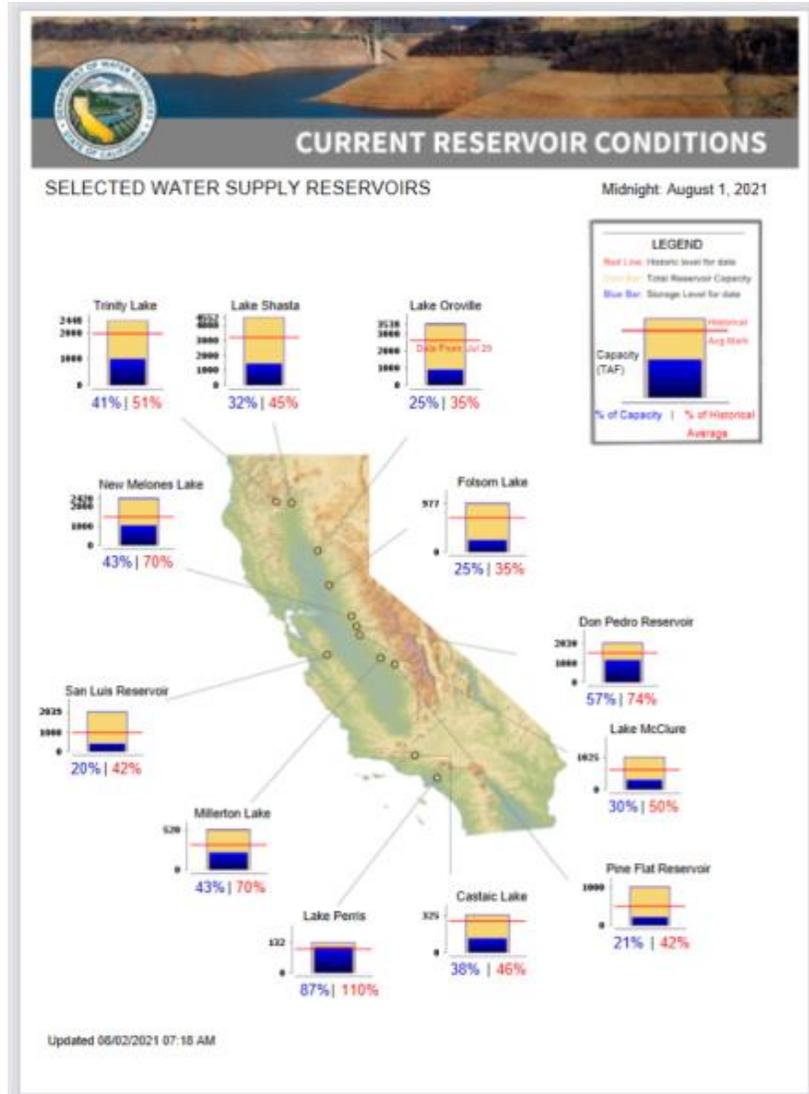


A drone view of Lake Oroville looking from the South Fork showing extremely low water under the Enterprise Bridge during a drought. Photo taken July 26, 2021. Kelly M. Grow/ California Department of Water Resources

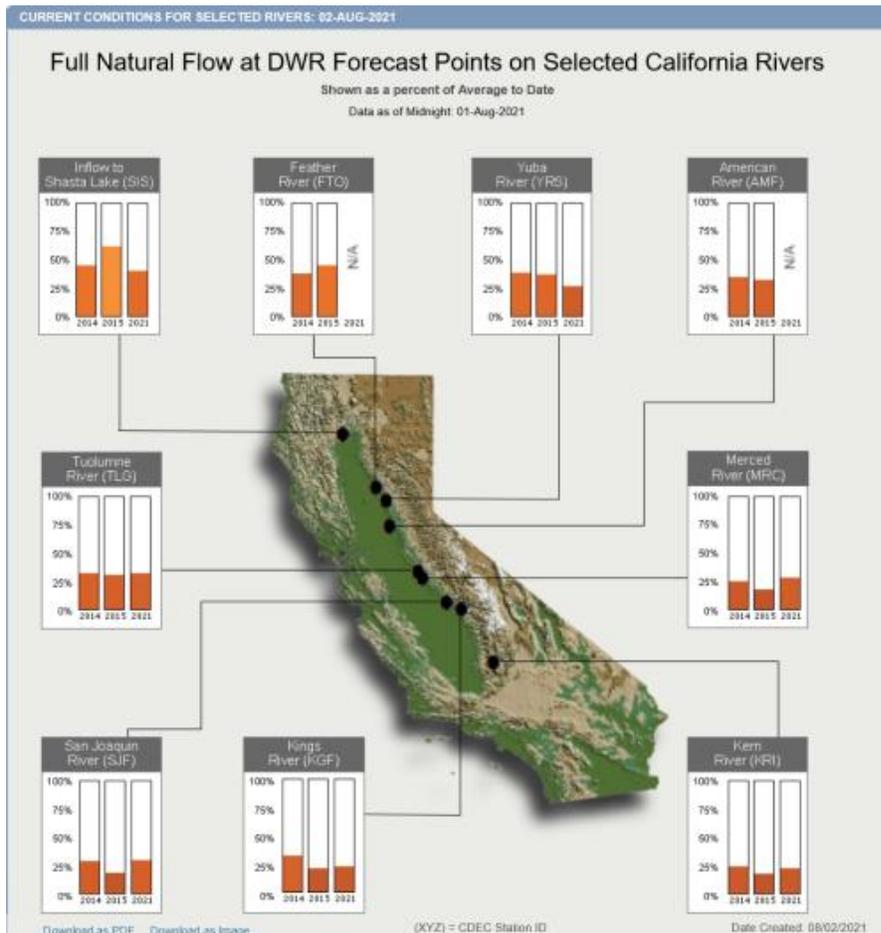
We're now in what some call the summer's anvil, the heart of the hot season. And while temperatures have moderated somewhat, widespread arid conditions, declining water levels, and large as yet contained wildfires like the Dixie, McFarland, and several new fires in Sequoia and Kings Canyon national parks have made for a challenging time in State water resources management. Throughout the U.S. western and southwestern States, seasonal flash floods have prompted declarations of local states of emergency with several missing people and a few regrettable fatalities. Fortunately for California, we have so far been spared the consequences of widespread flash flooding but seeing it in surrounding States is a sober reminder that even during the worst droughts, monsoonal conditions can bring devastating floods quickly and without regard to human safety.

Currently, water storage in CVP reservoirs is about 57% of the 15-year average. As of yesterday, total north CVP storage was 3.771 MAF which is approximately one-third of total north CVP capacity. It is important to make the distinction between active storage, relative to total reservoir capacity, and storage, relative to longer-term averages (e.g., 15-year average); for they are different. The former, a strict arithmetic portrayal of percent capacity paints a more ominous picture of a reservoir's status. The latter considers a wider range of reservoir storage factors reflected in past yearly operations and is perhaps a closer determinant of supply or yield risk.

The three largest federal reservoirs, Shasta, Trinity, and New Melones, currently are storing 1.454, 1.004, and 1.036 MAF, respectively. These storage volumes represent 51%, 64% and 75% of each of the reservoir's 15-year averages for this date, respectively. Oroville Reservoir is currently storing only 892,000 AF, almost a million AF lower than on this same date last year. At one-quarter of its total reservoir capacity, Oroville Reservoir storage is 44% of its 15-year average for this time of year.



All reservoirs lost considerable storage over the month of July. For example, Shasta Reservoir lost 292 TAF, Trinity Reservoir lost 158 TAF, New Melones, 180 TAF, and Folsom Reservoir lost approximately 45 TAF. These losses were primarily from power releases, with lesser amounts lost to direct diversions and evaporation. Evaporation for the month was high. Evaporative losses at Shasta Reservoir was calculated at 11,435 AF, for Trinity Reservoir it was 5,708 AF, for New Melones Reservoir, 7,054 AF and for Folsom Reservoir, 3,695 AF.



As most Californians will agree, water levels and river flows across the State were low, in fact, well below long-term averages. Sacramento River flows at Keswick were about 9,000 cfs yesterday. Flows in the lower American and Feather rivers were 1,018 and 2,000 cfs, respectively, considerably lower than their long-term medians for this date of 3,450 and 4,500 cfs, respectively. Barring any substantive change (e.g., flash flooding), such reduced flows will continue through to the end of the WY.

There are two-months remaining in WY 2020-2021. The State has arguably enough water to last until the new rainy season although there will be continuing shortages to various beneficial users including the environment.

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Prepared by Robert Shibatani

Robert Shibatani, a physical hydrologist with over 35-years combined experience as an international expert witness on reservoir-operations, climate change hydrology, commercial flood damage litigation, and water supply development. He is Managing Partner for The SHIBATANI GROUP International, a division of The SHIBATANI GROUP Inc. and resides in Sacramento, California. robert@theshibataniigroup.com

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San Jose Relies On Water From the Sierra Nevada. Climate Change Is Challenging That System

KQED | July 28, 2021 | Ezra David Romero

In Santa Clara County, lawns are dry, a reservoir is nearly empty, and water restrictions are mandated. After two winters with very little rain — and San Jose's driest year in 128 years of record keeping — the county is marked by one of the worst droughts in modern history.

Santa Clara County's experience of drought is set apart from the rest of the state by a myriad of issues — less water from the Sierra Nevada, the effect of human-caused climate change on water supplies, and a case of incredibly bad luck.

“This is a dire emergency caused by the confluence of several horrible things happening all at the same time,” said Gary Kremen, director of Santa Clara Valley Water. “This isn't like someone crying wolf.”

Valley Water relies heavily on water from the Sierra Nevada snowpack more than 100 miles away. But the agency only received 5% of the water it contracts from the state this year, a quarter of what it sources from the feds, and very little local rainfall.

“We have 2 million people in the county, compared to San Francisco's 800,000 or Oakland's 500,000,” he noted. “This is where the people live. We use a lot of water.”

Kremen likens the drought situation in his water district to someone losing their job without savings to fall back on and no outside help to get them through.

“You got no money coming in and none of your relatives want to send you any money because they have their own difficulties,” he said.

Santa Clara County is so dry and the water levels so low, that Kremen's agency now requires a 15% reduction in water use from all people and businesses. That amount may not not sound like a lot, but if it doesn't rain this winter, places like San Jose could be in deep trouble next spring or summer.

“I do not believe there's enough water for a third year [of drought],” Kremen said. “It's gotten horrible very quick.”



Anderson Lake is 3% full after it was drained so the dam could undergo a seismic retrofit. (Ezra David Romero/KQED)

The Kicker

The kicker on top of two very dry years in a row? The largest reservoir in Valley Water's system is virtually empty at 3% full, after it was emptied so that the Anderson Dam near Morgan Hill could undergo seismic retrofitting.

“When it's full this is our primary water supply in addition to our aquifer,” said John Varela , a director on the Santa Clara Valley Water District Board of Directors. “But it's empty, and we're in a drought, so it's not a good time.”

The agency drained the reservoir because the dam is vulnerable to shaking from a severe earthquake. The state wanted to make sure it could withstand at least a magnitude 7.0 quake, and the federal government mandated the retrofit. The work won't be finished for about a decade.

A Fundamentally Different Climate

In the meantime, Varela says the water district is exploring one possible solution for future water shortages: recycling wastewater. That clean water would then go back into the earth, restoring aquifers.

“We feel that recycled water is the sustainable water supply of the future,” he said.

The agency currently recycles 5% of its water at a facility in San Jose. Varela says the district is partnering with Palo Alto and Mountain View to build a second facility, and with Morgan Hill and Gilroy for a third. He said preliminary conversations are taking place around creating pipelines throughout the county to share water.

The district would like to double the amount of recycled water in the coming years. But warming temperatures are threatening the very system that supplies water to San Jose, and recycling efforts and other measures might not be enough.

“We now live in a fundamentally different climate,” said climate scientist Katerina Gonzales, who studies the causes and impacts of extreme precipitation at the University of Minnesota. She recently finished her dissertation at Stanford, where she focused on the West.



Tall, dry grass grows across from a green yard in the Cambrian neighborhood located in West San Jose on July 21, 2021. (Beth LaBerge/KQED).

She says warming has condensed the rainy season and is decreasing the annual snowpack. Both are challenging California’s aging water system, which was designed to gradually collect runoff from snowmelt. Not to capture a winter’s worth of rainfall during a couple big, wet storms, known as atmospheric rivers.

“Changes in atmospheric rivers affect almost every part of our infrastructure that deals with our relationship to water,” she said.

If storms come too early in the rain season, reservoirs fill up, creating a flooding risk. If water managers release water too soon in a drought year, it could mean dry reservoirs down the line.

“We can’t rely on this assurance of drought busting atmospheric rivers because of the way that the ingredients in the atmosphere have changed,” Gonzales said.

If California’s water system doesn’t evolve to mitigate impacts from climate change, Gonzales says places like San Jose will continue to have water issues.

State water officials seem to agree that the system has to change. Karla Nemeth, director of the California Department of Water Resources, says the state’s water system needs a major overhaul and Californians will need to save more water.

“We’re still working off past hydrology that was feeding a state that had fewer people,” she said. “All that needs to change, and it can change, if we get focused on how we adapt all of our modeling and operations to accommodate more climate extremes.”

What Drought Means For Residents

For residents in the San Jose region, these water woes translate to mandatory 15% water restrictions. People are cutting back mostly on irrigation, like watering lawns, gardens and parks. Even though people are letting their lawns go, water leaders say that can be avoided.

“Your lawn is still going to be nice, it just takes a little bit more time to be judicious about it, reprogramming your irrigation control to the right duration,”

said John Tang, vice president of regulatory affairs for San Jose Water.

Tang says people have learned to save water since the last drought in San Jose. Statewide, Californians use 16% less water.



Adam Whyte, 18, spreads mulch around his front yard. The family lawn died in the last drought. (Ezra David Romero/KQED)

“There's certain homes around here that have really heeded the call for conservation,” he said. “People are ripping out lawns and putting in drought tolerant landscaping.”

He says the 15% water reduction is mandatory, but the city is focusing on education and not enforcement. During the last drought, reduction grew to 30%.

“We don't have any water cops driving around giving people tickets,” he said. “We see it as more of a cooperative partnership.”

In San Jose, brown lawns and drought-tolerant yards are becoming commonplace.

Eighteen-year-old Adam Whyte's family allowed their lawn to die during the last drought. “It was an eyesore compared to everybody else in the neighborhood who had all this perfectly nice grass,” he said.

This year, his family is mulching the yard with bark from a neighbor. The high school senior is spending part of his summer break with a shovel in hand.

“We're just gonna spread it out, put up some bricks, maybe a little border,” he said. “Clearly, if we want grass that's just gonna up the water bill. We're not doing that.”

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California regulators vote to restrict water access for thousands of farmers amid severe drought

CNN | August 4, 2021 | Ray Sanchez, Alexandra Meeks and Brisa Colón



Source: CNN

(CNN)California water regulators voted Tuesday to restrict water access for thousands of Central Valley farmers as the state endures a severe drought.

The California State Water Board unanimously agreed to issue an emergency order that bans some farmers from diverting water from rivers and streams in the Sacramento and San Joaquin river watersheds to irrigate their crops.

Amid one of California's worst droughts, the Sacramento-San Joaquin Delta watershed has been suffering from low supply as demand continues to climb.

"This drought is very real," said Karen Ross, secretary of California's Department of Food and Agriculture. "It is a painful moment."

Under the new order, Californians who plan to divert more than 55 gallons per day from rivers or streams in this region must submit a petition and proposal to the state's deputy director for approval. All water rights holders must also report their water use and submit a certification to comply with the new standards.

Any person, business or group that violates the order will be subject to possible penalties and fines, officials said. The water board said enforcement will be incremental and focused mainly on high-grade water violations that significantly impact water flow.

The order must be approved by the Office of Administrative Law and filed with the Secretary of State before it becomes effective, according to a news release from the state water board. The regulations are expected to go into effect August 16, officials said.

The Delta is the state's largest surface water source, supplying two-thirds of Californians with at least some portion of their drinking water, according to regulators. Officials said the state is going through what is expected to be the second driest two-year period on record. April, May and June were the warmest and driest on record since 1896, they said.

Drought worsens in California as region faces more triple-digit heat, making it tougher to control the wildfires

Drought worsens in California as region faces more triple-digit heat, making it tougher to control the wildfires

During a comment period, residents acknowledged the crisis in the state, but some said the action violated due process rights and urged regulators to slow down implementation of the order. Some speakers said the order placed an unfair burden on mostly smaller farmers who would be left to prove their rights to water.

The drought has worsened significantly in California after months of record heat and little precipitation. In the most critically parched regions, wildfires are burning at incredible pace.

More than 95% of the West is in some level of drought, with nearly two-thirds in extreme or exceptional drought -- the two worst categories. Six states are entirely in drought conditions.

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THIS JUST IN ... PRESS RELEASE: STATE WATER BOARD APPROVES EMERGENCY CURTAILMENT MEASURES FOR THE DELTA WATERSHED

ACUTE WATER SHORTAGES PROMPT URGENT ACTION

Maven | August 3, 2021 | State Water Board:

With climate change-induced drought reducing water levels in the Sacramento-San Joaquin Delta to alarming lows, the State Water Resources Control Board today approved an emergency curtailment regulation with measures to preserve stored water to protect drinking water supplies, prevent salinity intrusion and minimize impacts to fisheries and the environment.

The emergency regulation must be approved by the Office of Administrative Law and filed with the Secretary of State before it becomes effective and curtailment orders can be issued.

Of the 6,600 water right holders in the Delta watershed, approximately 5,700 could be ordered to curtail diversions as early as this month under the authority provided by the regulation. The remainder, who hold older water rights or riparian rights, could be subject to curtailment if conditions worsen.

Without this action, the drinking water supply for 25 million Californians and the irrigation supply for over 3 million acres of farmland could be at significant risk should drought continue into next year.

“It is imperative that we move urgently to better manage the water we still have and prepare for the continuation of drought conditions,” said Board Chair E. Joaquin Esquivel. “The Delta watershed is a resource shared by agriculture, urban areas, rural towns and fish and wildlife, among many others. This decision is not about prioritizing one group over the other, but about preserving the watershed for all, implementing our water rights priority system, and ensuring we manage through this drought, especially for critical health and safety needs.”

“Drought and climate change have delivered a serious blow to California agriculture this year, making the board’s curtailment action necessary,” said Karen Ross, secretary of the California Department of Food and Agriculture. “To help farmers and ranchers adapt, the Governor’s California Comeback Plan provides for investments in climate smart agriculture and water resiliency programs to support communities.”

Today’s action was prompted to preserve critical water storage for future health and human safety and to mitigate the increasingly harmful environmental and economic impacts drought is causing in the Delta. The 1,153 square-mile watershed provides two-thirds of Californians with drinking water, supports 80% of the state’s commercial salmon fisheries and is an important habitat for more than 750 animal and plant species, including waterfowl, birds of prey and threatened or endangered fish such as the Delta smelt, Chinook salmon and steelhead.

“We’ve been working to maintain survivable conditions for fish and wildlife in the Delta, but water released from reservoirs is simply not showing up downstream as expected,” said Karla

Nemeth, director of the Department of Water Resources, which manages the State Water Project. “If water right holders continue diversions, it will worsen salinity in the Delta and further deplete reservoirs below critical levels. Today’s actions alone won’t solve our depletion challenges, but we need to start implementing and adapting as needed.”

Ernest Conant, regional director for the Bureau of Reclamation, which manages the Central Valley Project, added, “Despite our best coordinated efforts, the projects continue to struggle to meet water temperatures needs, Delta salinity conditions, and water for public health and safety. With the extremely low inflow to our reservoirs, we are running out of reservoir storage and other tools to meet all the competing demands. We support the Board’s efforts to preserve water for later this year and for next year.”

Without curtailments, and if water diversions continue at their current pace, the following significant impacts are expected:

- Excessive salinity: Fresh water releases from upstream reservoirs are needed to repel saltwater intrusion from the San Francisco Bay during dry months. If stored water supplies are insufficient for releases, high salinity renders water in the Delta unusable for humans and harms the environment.
- Drinking water and farmland impacts: Upstream reservoirs are drained below critical levels, endangering the drinking water supplies for 25 million Californians and the irrigation supplies for nearly 3 million acres of farmland should drought continue into a third year;
- Harm to fish and wildlife: Low water levels can result in habitat loss, an increase in invasive species, stress on endangered species and even extinction. Delta smelt nearly disappeared during the last drought in 2016. Warm water temperatures caused winter-run Chinook Salmon, another endangered species, to lose 95% egg mortality in 2014-15.
- Increase in harmful algal blooms: Severe shortages contribute to harmful algal blooms in water that can be fatal to animals and young children. Consuming fish caught during a heavy bloom can also pose a health risk.

Dry conditions in the Delta worsened this spring, when climate change-induced warm temperatures led to unprecedented losses of runoff to streams and reservoirs, and prompted water diverters below the reservoirs to withdraw their water earlier and in greater volumes than in previous critically dry years. This combination of events resulted in the loss of nearly 800,000 acre-feet of water, enough to supply more than one million households for a year and nearly the entire capacity of Folsom Reservoir.

Governor Gavin Newsom declared a drought state of emergency that now covers 50 of California’s 58 counties. The governor’s executive action on May 10 directed the board to

consider the emergency regulations that authorize curtailments and allowed for it to require additional information from right holders to help predict future demand and ensure compliance.

Background

The equitable administration of California's water rights system enhances water management in the Delta. The age and type of right, be it appropriative (acquired natural or abandoned water) or riparian (natural water connected to land), generally informs how water can be diverted during drought conditions. In times of shortage, those with more junior rights typically are required to stop diverting from rivers and streams before limitations apply to more senior right holders.

Prior to implementing the emergency regulation, the board alerted water users to the acute shortages three times within the past five months. On March 22, letters were sent to all right holders and agents in California informing them of dry conditions, encouraging planning and conservation, and requesting accurate and timely water use reporting. On June 15, notices were mailed to approximately 4,300 right holders in the Delta, urging them to stop diverting amid worsening hydrologic conditions, and warning another 2,300 claimants with more senior rights that continued drought could impact their future ability to divert. And on July 23, staff notified senior right holders in the watershed that supply is insufficient for any diversions under some pre-1914 appropriative claims or to support full diversions by some riparian claims.

The board encourages water users to collaborate on voluntary agreements that help local communities adapt to water shortages, prevent impacts to other legal water right users, and benefit fish and wildlife.

The board website contains additional information about drought, measures taken in response, the latest developments and an updated methodology that determines when water in the Delta is unavailable. Staff demonstrated the Unavailability Visualization Tool in May and held another public workshop July 27 on the emergency regulation.

On July 8, the Governor asked all Californians to voluntarily cut their water usage by 15% with simple measures to reduce water use. Tips for conserving water, such as taking shorter showers, fixing indoor leaks and installing drought resistant landscaping can be found on the Save Our Water website.

The State Water Board's mission is to preserve, enhance and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper resource allocation and efficient use for current and future generations.

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THIS JUST IN ... STATE WATER BOARD RELEASES DRAFT DROUGHT EMERGENCY REGULATION FOR DELTA WATERSHED (PRESS RELEASE AND DRAFT REGULATION)

Maven | July 23, 2021 2304 | From the State Water Board:

With water levels in the Sacramento-San Joaquin Delta at historic lows due to the extreme effects of climate change, the State Water Resources Control Board today released a draft curtailment and reporting regulation and scheduled a public workshop on potential measures to preserve stored water for threatened drinking water supplies, prevent salinity intrusion and minimize impacts to fisheries and the environment.

The draft drought emergency regulation (below) prohibits diversions when water supplies are not available under a water user's priority of right, and allows the State Water Board to require additional information related to their diversions and use. Currently, water is unavailable for approximately 5,700 right holders and claimants. As supplies and demands evolve, diversion requirements would change accordingly.

During the [July 27 workshop](#), staff will present the proposed regulation and recent updates to the [Water Unavailability Methodology for the Delta Watershed](#).

Members of the public can provide feedback on the draft regulation until noon July 29 in the following ways:

- Provide input during the July 27 workshop.
- Email comments to: commentletters@waterboards.ca.gov, with a courtesy copy to Bay-Delta@waterboards.ca.gov, by noon July 29.
- Mail comments to: Jeanine Townsend, Clerk to the Board, State Water Board, P.O. Box 100, Sacramento, CA 95812-2000. Written comments must be received by noon July 29.

The board will consider adopting the regulation at its August 3 meeting.

Background:

California and the entire Western United States are facing a significant drought in the wake of one of the driest periods on record. On May 10, Governor Gavin Newsom expanded a drought proclamation that covers the entire Delta watershed and authorizes the board to implement emergency measures to curtail diversions when water is unavailable under a right holders' priority of right and to protect releases of stored water. The proclamation was further expanded July 8 to include 50 of the state's 58 counties and to call on all Californians to voluntarily reduce water use by 15 percent to protect water reserves if drought conditions continue and help maintain critical flows for fish and wildlife.

On June 15, the State Water Board sent letters to approximately 4,300 right holders in the Delta, urging them to stop diverting amid worsening hydrologic conditions, and notified another 2,300 claimants with more senior rights that continued drought could impact their future ability to divert.

With the drought intensifying and likely to continue into next year, staff drafted the emergency regulation to urgently address acute shortages in the watershed, protect storage levels in reservoirs and fairly administer California's water rights system.

[Enhanced Water Use Reporting and Curtailment of Diversions due to Lack of Water Availability in the Sacramento – San Joaquin Delta Watershed](#)

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Bay Area Water Supply and Conservation Agency shares tips on water conservation

Cutting back watering lawns and reducing shower times may be key

Daily Journal | July 27, 2021 | Julia Lee

The Bay Area Water Supply and Conservation Agency has tips on how to conserve water as Californians are also asked by the state to reduce water use by 15% to address the current drought.

“During our last drought, our customers, both residential, business customers combined, exceeded the level of savings. So we know we can do it, but it is going to take action by everybody,” said Nicole Sankulla, CEO and general manager of BAWSCA, Bay Area Water Supply and Conservation Agency, which represents Peninsula water users with the San Francisco Public Utilities Commission.



In the summer, there is generally an increase in outdoor water use because of the need to water and irrigate more, which also presents the greater opportunity for saving, she said.

Examples include trimming back one's lawn's water scheduling to two or three days only, checking for leaks and watering during the cool part of the day so there's less evaporation loss.

“A lot of people have their irrigation run at night, and so they don't see potential leaks or broken sprinklers or things like that. So maybe running your system on a test to make sure you don't have any leaks and if you do, fix them,” she said.

BAWSCA's website also has a water calculator as a tool to help people figure out how long they should be running their sprinkler for their outdoor irrigation. And its agencies also offer a rebate for a new smart irrigation controller.

For indoor water use, it can be a good idea to replace an old toilet as they are typically the largest water users inside the home, and if it's time to replace a clothes washer as that's the second largest water user inside the home. Newer dishwashers, clothes washers and toilets are designed to use less water.

And another strong recommendation is taking shorter showers with high-efficiency shower heads.

“Every minute you save on a shower saves 2 1/2 gallons, assuming you have a 2 1/2 gallon shower head,” she said.

Additional tips include turning off the water when brushing teeth, washing the dishes or using a bucket of water when washing vegetables.

“We’re seeing a little bit of reduction but we’re not seeing all that we need so we really do need to ask everybody to step up and do more. So we can achieve these important reductions,” she said.

When water is saved, it is also saved in the reservoirs for next year.

“So it really is water saved today is going to be saved for us for our use next year, especially if it continues to be dry,” she said.

A full list of tips can be found here: <https://bawsca.org/conserves/tips> and its new videos providing landscape education classes can be found here: <https://bawsca.org/conserves/landscaping/videos/>.

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julia@smdailyjournal.com

Drought Depleting Bay Area Reservoirs, Driving Urgent Need For Conservation

KPIX 5 | July 27, 2021 | Devin Fehely

MORGAN HILL (KPIX 5) — The state's severe drought is transforming the landscape of our streams, lakes and reservoirs as the supply of water is depleted day by day.

The changes at Uvas Reservoir in the hills above Morgan are readily apparent. The waterline has receded significantly as the footprint of the reservoir shrinks.

"We came here last year with the same group and the water was almost up to the top of the ramp here. Driving by, we said we hope there's still some fish in there," says Kurt Ottman during an annual camping and fishing trip near the reservoir with family and friends.

According to the Santa Clara County Water District, Uvas is currently at roughly 20% of its total capacity – basically 80% empty. And a district spokesperson says the situation is bad at all of the county's reservoirs.

"Our reservoirs are at 13% capacity, all ten of them combined. So, that really shows you that our reservoirs are low," said water district spokesman Matt Keller.

The water district declared a drought emergency last month, urging customers to cut water usage by 15%. Conservation efforts, however, have been modest with a 6% reduction since the June declaration.

The campers say the receding lake level drives home the urgent need for conservation.

"Sometimes, we'd leave the tap running at home. But now, we turn it off right away," said camper Riley Purnomo.

Every bit of conservation will help as there are months still to go in the summer before there's any chance of rain to replenish depleted reservoirs.

Water officials say water gets stored in two ways, above and below ground. The below-ground storage in the aquifers isn't as bad as the situation with the reservoirs.

But the two are interconnected since the reservoirs replenish the aquifers, and if they're empty it will impact water availability for future years.

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California drought: Here's how to use 15% less water

Gov. Gavin Newsom asked California residents to voluntarily reduce their water usage, what does this number mean for an average Bay Area household?

Mercury News | July 21, 2021 | Rachel Oh



ALAMEDA, CA – MAY 4: Sprinklers water the lawn of a house in Alameda, Calif., on Tuesday, May 4, 2021. (Ray Chavez/Bay Area News Group)

Gov. Gavin Newsom asked California residents this month to voluntarily reduce their water use by 15%. What does this number mean for an average Bay Area household?

Based on 2020 estimates, an average Bay Area household of three individuals spends about 206 gallons of water per day. Reducing water use by 15% would mean using about 30 gallons less water per day.

We asked Tia Fleming, executive director, external affairs at California Water Efficiency Partnership and Heather Cooley, director of research at Pacific Institute, for tips and they offered some easy ways to meet the recommendation:

Check for leaks in faucets and toilets: A toilet leak can amount to 30 gallons per day

The amount of leak can vary considerably, but an average toilet leak will waste about 30 gallons per day. In extreme cases, a running toilet can leak as much as 4,800 gallons per day — more

than 23 times daily average household usage. Other possible sources of leaks are shower heads, sinks, sprinklers, and even pipes.

Large leaks are easier to detect – you might notice it if you get an extraordinarily large water bill or if you hear any dripping noises or “ghost flushes” (in which a toilet makes a flushing noise but no one is using it). For smaller leaks, you could also turn off all running water and check the water meter to see if it still changes.

Water your garden one fewer time a week: This could save about 27 gallons of water
Watering a yard for an average Bay Area household takes about 27 gallons. Hotter regions or larger lawns may require more water. Avoiding the hotter times of the day could also make watering your garden more efficient.

Reduce shower time by two minutes: This could save 12 to 15 gallons of water a day
An average California shower head spews out 2 to 2.5 gallons of water per minute, which amounts to more than 20 gallons of water during a 10-minute shower. If each person in the household could shorten their showers by two minutes, an average household would save around 12 to 15 gallons per day.

Turn off the sink tap while brushing your teeth or shaving: This could save around 24 to 30 gallons of water a day
Water from sink faucets is generally known to flow at 2.5 gallons per minute. If you spend about a minute and a half brushing your teeth, leaving water running the whole time can waste around 4 gallons. If you brush your teeth twice a day and keep the sink faucet closed, you could save around 8 gallons. Similarly, turning off the tap while shaving can save 10 gallons of water per shave, assuming that shaving takes about four minutes. Multiply these numbers by three for the entire household.

Wash full loads of dishes using a dishwasher: This could save around 50 gallons per wash
Letting the water run while doing your dishes would use 2 to 2.5 gallons of water per minute, which would amount to more than 60 gallons if the task takes half an hour. On the other hand, experts say a dishwasher generally uses 6 to 10 gallons of water per load, although it can vary widely depending on the type. Therefore, washing a full load of dishes with a dishwasher could save 50 gallons per wash. If you don't have a dishwasher, you could conserve water by turning off the faucet when you don't need the water running.

Wash full loads of clothes: One fewer load a week could save 5 gallons of water per day
While the number is different for each machine, an average washing machine in the U.S. market uses about 36 gallons of water per load. By reducing one load of laundry per week, you could save approximately 5 gallons of water per day.

Upgrade your utilities: For example, a newer toilet could save 33 gallons a day

A more efficient shower head, which has been required in California since 2018, spews out 1.8 gallons of water per minute – which is less than older ones that release 2 or 2.5 gallons per

minute. That means one person could save up to 7 gallons of water each day, even if they take the same length of shower. Changing your old, pre-1990s toilet to a newer one could also save around 33 gallons per day.

Replace plants in your garden with California native plants or other water-wise plants

It's hard to find out how much exactly you can save with water-efficient plants. But planting California native plants or other water-wise plants are recommended, according to the state's "Save Our Water" program. Experts also recommend planting in the fall or winter, when it rains more often. Santa Clara Valley Water District and the East Bay Municipal Utility District provide rebate programs for converting your lawn to low-water use landscaping.

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Drought prompts California to halt some water diversions

Associated Press | August 4, 2021 | Adam Beam



In this June 9, 2021, file photo, the dried, cracked earth of a former wetland that was drained in an effort to prevent an outbreak of avian botulism which occurs in Tulelake, Calif. California regulators are planning to stop thousands of farmers from taking water out of the state's major rivers and streams. The State Water Resources Control Board is considering the extraordinary order because of an historic drought gripping the western United States. The board will vote on the order Aug. 3. (AP Photo/Nathan Howard, File)

SACRAMENTO, Calif. (AP) — Some farmers in one of the country's most important agricultural regions will have to stop taking water out of major rivers and streams because of a severe drought that is threatening the drinking water supply for 25 million people, state regulators said Tuesday.

The Water Resources Control Board approved an emergency resolution empowering regulators to halt diversions from the state's two largest river systems. The order could apply to roughly 86% of landowners who have legal rights to divert water from the San Joaquin and Sacramento river watersheds. The remaining 14% could be impacted if things get worse.

The rule won't take effect for another two weeks and it includes exceptions for some uses, such as water for drinking, cooking, cleaning, sanitation and generating electricity. Without the order, officials warned much of the state's drinking water supply would be at risk if the drought continues into next year.

"This decision is not about prioritizing one group over the other, but about preserving the watershed for all," said E. Joaquin Esquivel, chair of the Water Resources of the Control Board.

The vote came one day after regulators halted water diversions from another Northern California river system, the Upper Russian River, warning Lake Mendocino would be empty by the end of the year, "putting both people and wildlife in harm's way."

Tuesday's vote is significant because it applies to the Sacramento and San Joaquin river systems, which together drain 40% of California's land and account for at least a portion of the water supply for two-thirds of the state's nearly 40 million residents.

Known as the California Delta, the river systems get their water mostly from snowmelt in the Sierra Nevada mountains. The past two years have been the second driest on record. The soil was so dry that it absorbed much of the snowmelt that was supposed to flow into the state's rivers. This year, California lost so much water this way that it would be enough to fill nearly all of Folsom Lake.

Extreme conditions like these are often from a combination of unusual random, short-term and natural weather patterns heightened by long-term, human-caused climate change. Climate change has made the West much warmer and drier in the past 30 years, increasing risks for drought and wildfires.

The board's action is possible because Gov. Gavin Newsom issued an emergency declaration earlier this year giving them permission. Newsom, who is facing a recall election next month, has asked residents and businesses to voluntarily cut their water use by 15%.

Newsom's administration has also relaxed rules about how much water must be available in rivers and streams for environmental purposes. And they've built a stone wall in the West False River to prevent saltwater from the Pacific Ocean from creeping into the freshwater rivers and contaminating the water supply.

But even with those actions, demand for water from the San Joaquin River watershed is about 16 times the available supply while demand for the Sacramento River watershed is about three times the supply, according to Lisa Hong, an engineer for the Water Resources Control Board.

"The fact remains that water supplies are extremely limited across the state and we are running out of options," said Ernest Conant, regional director of the U.S. Bureau of Reclamation. He told board members on Tuesday he supports the new rule.

The rule gives state regulators authority to enforce it, including fines for noncompliance. The state is hiring 15 people to help with enforcement, according to Erik Ekdahl, deputy director for the division of water rights.

Ekdahl said the state would mostly respond to complaints about people breaking the rules. He said the state usually gets about 50 complaints per year. But during the drought, that has increased to about five per day.

Farmers are “discouraged” and “dismayed,” said Chris Scheuring, senior counsel for the California Farm Bureau.

“In general, farmers understand drought and they understand lean rain years. That’s the business we’re in,” he said. “But they don’t understand the downward slide in water reliability we are facing in California, sort of on a systemic level.”

California’s complex water rights system will govern who is impacted the most. In general, people who have held water rights the longest will be impacted the least.

The Westlands Water District, one of the largest agricultural water districts in the country, supports the new rule because they say it will stop people from illegally taking water from rivers and streams. But the San Joaquin Tributaries Authority opposes the rule, saying it is “overly broad” and asks water users to trust the government to manage their systems.

“I think there is a fundamental issue with trust,” said Valerie Kincaid, an attorney for the San Joaquin Tributaries Authority.

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Does a state drought regulation threaten local water rights? MID, TID weigh in

Modesto Bee | August 3, 2021 | Ken Carlson



MID canal runs through Wood Colony in Wood Colony, Calif., on Friday, June 12, 2020. ANDY ALFARO
AALFARO@MODBEE.COM

The Modesto and Turlock irrigation districts don't expect an impact this year from an emergency drought regulation that could stop farmers from diverting water from the state's major rivers.

But they are concerned about precedent-setting and whether a state agency's proposed drought orders will shrink the availability of water for Northern San Joaquin Valley farmers in 2022.

The State Water Resources Control Board is considering the extraordinary drought regulation at a meeting Tuesday in Sacramento that's expected to spur many hours of debate. The 9 a.m. meeting is being held remotely due to COVID-19 restrictions.

"Our concerns are less about this year and more about the potential precedent of such a state action," said Michael Frantz, a TID board member.

The water districts and Valley political leaders have mobilized to urge the state water board to reconsider the emergency curtailments or amend the proposal.

Gov. Gavin Newsom's second drought proclamation, on May 10, directed the state water board to consider curtailment of water diversions because of the serious drought conditions and threat to California's water supply.

The SWRCB's executive director told the Sacramento Bee that regulators are trying to protect drinking water supplies and endangered fish in the Sacramento and San Joaquin river watersheds.

Many farmers in the San Joaquin Valley are already faced with drastic cuts to their contracts for water allocations from the Central Valley Project and State Water Project.

In a joint statement last week, the MID and TID said it's unlikely the drought regulation will affect water deliveries the remainder of this year based on the understanding the state orders to stop diversions won't apply to water already diverted into storage. The two districts are owners of Don Pedro Reservoir.

District officials are concerned an order to stop diversions from the Tuolumne River could substantially reduce water supplies for agriculture in 2022 and beyond, depending on when the order is lifted.

AUTHORITY GIVEN TO DEPUTY DIRECTOR

According to the proposed regulation, the deputy director of the State Water Resources Control Board will have authority to stop diversions from rivers based on a methodology developed for the Sacramento-San Joaquin River delta.

An agenda report for Tuesday's meeting says the curtailment orders could be issued when water is needed to control salinity in the delta, protect drinking water supplies and minimize impacts on fish and wildlife. Rivers flowing into the delta supply the water needs of two-thirds of California residents, give life to industry and irrigate millions of acres of farmland, the state water board says.

The state agency says most reservoirs in the state are at historic lows, "creating significant concerns for salinity control, municipal water supplies, temperature management and other environmental needs this year and going into next year."

The water board's deputy director would allow diversions to resume when the water outlook improves "or is projected to increase due to precipitation and runoff events or due to reductions in demand," the proposed regulation states. The deputy director will consider evidence such as water supply forecasts of the state Department of Water Resources and other sources in lifting orders that forbid diversions from a river.

Frantz said the irrigation districts question whether it's legal to give so much authority to the deputy director over the state board's water rights division.

Other groups representing public water agencies want to see language making it clear the emergency curtailments do not apply to water currently in storage and also want more certainty on the process of resuming diversions.

Water diversions from the Tuolumne are the life blood of the agricultural industry in Stanislaus County, which contributes \$7 billion annually to the local economy.

Some farmers affected by the proposed regulation have water rights dating back before 1914.

ASSEMBLYMAN TAKES ISSUE WITH PROPOSAL

“In no other industry would the destruction of billions of dollars in economic productivity and thousands of jobs by a state regulator be tolerated,” Assemblyman Adam Gray, D-Merced, said in a recent news release.

Gray said the state water board is using inaccurate water forecasting in trying to justify the new drought regulation. His press release said state modeling miscalculated the amount of Sierra runoff this year by 800,000 acre feet.

With the proposed regulation, Gray said, people living in rural areas like his Assembly district will bear the economic and social burden of the drought.

Steve Knell, general manager of Oakdale Irrigation District, said the state water board had six years since the last drought to prepare for another dry spell.

“That preparation didn’t occur,” Knell said. “It is because of this lack of preparation that the state water board is now declaring an emergency.”

Knell said water districts were given three days to respond to the draft regulation.

The San Joaquin Tributaries Authority, representing MID, TID and the Oakdale district, is contesting the proposed regulation in written comments, saying its provisions are unlawful and outside the authority of the state board.

The SJTA said the methodology for curtailing water rights is flawed.

Frantz said the TID has a track record for managing limited water supplies in drought years and ensuring water is reserved for the needs of fish.

“We have been good stewards and the watershed is well managed,” he said. “We started preparing for a multiyear drought last year.”

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‘Adapt or We’ll Break’: A Water Expert Lays Out the West’s Risky Future in the Megadrought Era

"Eventually, we'll either have to adapt, or we'll break."

Maven | July 28, 2021 | Molly Taft



The tall bleached "bathtub ring" is visible on the rocky banks of Lake Powell at Reflection Canyon on June 24, 2021 in Lake Powell, Utah. Photo: Justin Sullivan (Getty Images)

The West's megadrought has produced no shortage of terrible stories. Drought conditions have enveloped 90% of the region, leading to record low water levels at Lake Mead and Lake Powell, the two largest reservoirs in the U.S., as well as countless other smaller water systems throughout the region.

The impacts have extended beyond manmade bodies of water, though. Rivers and other lakes in the region have run hot and dry, endangering wildlife. And forests have been charred by wildfires, running the risk of befouling lakes and streams.

All of these are indicators that the West's water supplies and burgeoning population are on a collision course. Factoring in climate change, which is expected to make the region's precipitation more erratic and lead to heat that will further strain water resources, and it's clear the situation is pretty dire. But these are huge forces, and it can be hard to understand what all this actually means.

Will water taps run dry as Lake Mead and other reservoirs shrink further? Can the West's precarious water system be rebalanced? If so, where do policymakers and communities even begin?

In order to get a little insight into how we got here and what lies ahead, I reached out to Newsha Ajami, the director of Urban Water Policy at Stanford University's Water in the West program and a research associate at the Stanford Woods Institute for the Environment. This interview has been edited and condensed for clarity.

Molly Taft, Earther: I know this is a big question, but, as succinctly as possible—how did we get here? How did we get to this modern water management system in the West, that basically allowed it to get so big and have such huge problems?

Newsha Ajami: It depends on where you are, but if we think about it conventionally, humans used to settle around water sources. Romans and Persians figured out a way to move water from location to location, but the reality is, the majority of human populations gathered around water. What we see in the last century is that we started actually figuring out how to overcome that limit and move water around where we wanted to go. That's what you see in California and the West. People are living in places that don't really have the capacity to meet water demand, but they're all there, and we've built all this infrastructure that moves water thousands and thousands of miles in all directions to make that happen. A lot of these communities have expanded beyond their capacity. That transition was partly fed by federal money—the federal government invested heavily in some of this western water infrastructure over the past century to sort of make the West happen.

As the population grew and as people came, the people who arrived first had more access to water. But then we have cities and communities that have power, they ventured out to see where they could get their water from, and they started moving water. Las Vegas is a great example of that. They basically put straws into Lake Mead to enable some of the growth we're seeing. [Editor's note: The "third straw" is the term literally used by policymakers for a pipe that sucks water out of from the bottom of Lake Mead.]

We also had no clue about the consequences of the decisions we were making. It was very much blind engineering power projects, very much focused on how we can do this. We have all these engineering skills and tools and resources, why wouldn't we build this? Nobody anticipated these things would be so disastrous environmentally over time. And then you have all this manmade infrastructure, they can't last forever, and they gradually lose their efficiency. And then you have climate change. As time went on, things started falling apart, because of climate change, aging infrastructure, and the reality that we realized the environment is vulnerable to the decisions we're making. It's all come to a head now.

Earther: You mentioned a lot of the way the West's infrastructure was developed was very in the moment without a lot of thought to the future. Can you give an example?

Ajami: Lake Mead is a good example. Lake Mead basically stores snowmelt water and redistributes it during the late spring and summer. It created this transition time that we didn't have before—we had snow, it would melt, the Colorado River would flow and go all the way to

Mexico and the delta in Baja, and it would go back out into the ocean. With Lake Mead, we basically created this storage system that keeps that water. You can release it gradually, use the water at different times. On top of that, these dams were able to generate electricity—which was great, because it generated electricity that was much needed.

But at the same time, this is a living river, with an ecosystem that depended on that river. Species depended on that water, and the flow and the temperature of the water were impacted by the decision. It started impacting the ecosystem, and then this water, by the time it gets to Mexico, it basically doesn't exist for those people either.

Earther: I've read that a lot of experts in the West started to worry about water resources even before climate change started becoming more obvious. It was clear we were overtaxing the system. Was there, like, an "oh, shit" moment, and, if so, why didn't people start fixing it before now?

Ajami: We really just did not think about the long-term consequences of those decisions. It kept coming back to us during different droughts and times when we didn't have enough snow. There's also the fact that there are so many people up and down these rivers. The craziest thing with water and water allocation is we don't do a good job of monitoring. It depends on the state you're in, but some don't monitor their groundwater, sometimes they have data, sometimes they don't. You can over-allocate your water because you expected to have more than what's in the system. You have all these people that are depending on this water, and if you build this management system on top of this, it is problematic.

The climate didn't used to be like this. We were in drought in 2009, got out of it, back in it in 2012, got out of it in 2017, and now we're back in it in 2021. This isn't how it used to be, we used to go decades before we'd go back to these extreme dry periods. Now, you don't even have that any more. It's just here, the whole time, a constant problem. That's what climate change is actually doing—it's a constant reminder that the system was a badly designed system and the management we have on top of it was not very well thought through.

We built this system as a system of abundance. We thought that whenever we ran out of water, we could just tap another river, another lake, another place, or the system would produce enough water to meet our needs. The reality is that we're realizing there's no such thing as abundance. Climate change is exacerbating the problems that the system has.

Earther: So what are some of the steps that we need to take to go about fixing this? I know living in New York, when I turn on my tap, I don't think about water scarcity or droughts, or where my water comes from. Do people in the West need to start thinking about that, though?

Ajami: People all over the country have no clue where their water comes from. They pay their water bill, or the building pays their water bill, their water is cheap. It doesn't matter what area of the country you live in. This is a problem because people don't value water. If they don't value it, they don't want to be part of the discussion. And if they don't value the discussion, the biggest

lobbying group is going to take over the discussion. The conversation becomes a fight between people with power and money, and not a logical discussion. People have a really hard time wrapping their head around water, what it means, where it comes from, where it goes, what we're paying for.

Earther: Do you see a future in the short- or medium-term where we're monetarily going to have to pay more for water?

Ajami: I mean, we should. What everyone in the U.S. is paying for, nobody pays for their water, we pay for the services we receive. We are not paying for the footprint we're creating or the environmental impacts we're causing by using water. You may have heard that farmers pay less than we do, which is not true—they're paying for the same services as you and I, they just don't need drinkable water. Their water either doesn't need infrastructure or doesn't need to be treated.

Nobody's paying for water. The discussion needs to be—is that how we value the resource that we all depend on, what is basically the essential resource our livelihood, that our socioeconomic realities depend on? Ultimately, I think we should pay more for our water.

Think about our houses—we flush down drinkable water in our toilets. Whose idea was that? We take water, treat it to the best quality, and flush it down the toilet. That's crazy. And the saddest part of this whole thing, right now, today, we are building the cities of the future, and we're still building them based on these same ideas.

Earther: That's wild.

Ajami: It's abundance. It's a result of the centralized system, which was driven by the fact that they could manage quality, take water to a central filtration system, clean it up, take it to people's homes. At the time, nobody was thinking, you know what, there will be a day that there will be so many people and so many different dry and hot years that we will need this water for so many other purposes so we shouldn't be flushing that water.

Another interesting thing—the biggest crop we grow in the U.S. is grass. Not the grass the cows are munching on, but the grass that you or I might have in our backyard, that we're watering, we're not eating. It's crazy that we are using this much water to grow something that we don't even need.

Earther: I remember the last time California was in a drought, there were water restrictions in Los Angeles that came with fines, but the rich people who wanted to keep their lawns just went ahead and did it, and some of them were able to pay the high fines for it. It does seem like in the system as it stands, there are a whole lot of possibilities for water to be something that people who can pay for it can still access water in abundance.

Ajami: Yeah, and that's a great point. We have to talk about equity and justice and access—should people who can pay for grass be allowed to have grass? At the end of the day, that's sort of how we're paying for electricity—people who can afford to have 50 different TVs in their homes, they're paying the bill, but not everybody needs to or wants to do that. The reality is, just because we don't want to promote extreme use doesn't mean we shouldn't charge people more. Right now, what we're doing with the cost of water is that not only are we not charging people properly, but we're not helping low-income communities either because we don't have the resources to invest in systems that they need.

Earther: What sort of changes do you foresee in folks's everyday life as the drought gets worse?

Ajami: There's a wish list and actual trends. People who are building a lot of new tech campuses are doing a lot to recycle water. There are discussions around the price of water, there are discussions around doing more with drain water systems, there are a lot of efforts around conservation efficiency, lots of efforts to clean up polluted groundwater basins. That's another crazy thing—we never used to care about our groundwater. Industrial activities have polluted groundwater supplies because we never thought we would need them. California and some of the Western states that didn't used to have groundwater laws are making groundwater laws. Quality is becoming more and more of an issue. There's a lot of effort to maintain the quality of water, making sure we can preserve the quality of lakes and bays and water bodies.

Some of these actions are actually happening, but one thing on my wish list, I would love to see people thinking about how development today is impacting our water footprint of the future. You can rethink the not-very-efficient system we have and start building for the future, rather than doing the same thing over and over and complaining about the results.

Earther: It sounds like our water system is incredibly inefficient and wasteful. But even if we tighten up the system, make sure we're using everything and really reusing water as much as possible, can the West as a region support the amount of pressure we put on it, once you add in climate change? Is that something you think about?

Ajami: Yes, I do think about that.

Earther: Sorry, grim thoughts are my specialty.

Ajami: No, it's a great question. Eventually, we'll either have to adapt, or we'll break. If you talk about drought, drought is our new normal. It's not a drought anymore. We have to shift that mindset and say, drought is a normal thing, it's our reality. If we have a wet year, we have to think about how we can protect and cache as much water as we can, store as much water as we can to help our system recover.

The West can survive if it shifts its mindset, changes the way we manage water, changes the way we approach drought, changes wildfire management and flood season, changes how we

manage between the environment and built systems, how much we charge for water. If we really can embrace all these things in a systematic way, we might be able to survive. If we continue on in treating groundwater as an endless system we can just tap into and use, arguing over “oh should we monitor or not monitor, people really want to have freedom of choice”—that’s never going to survive. We’re never going to survive. A bunch of people are going to keep using and abusing the system.

We have a path in front of us and we know the things we need to fix. If we don’t, I don’t know if we can survive.

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Will Delta water users sue — again — to stop California’s drought rules?

Cal Matters | July 27, 2021 | Rachel Becker



Satellite image shows how green and full Lake Oroville was in June 2019 and how shallow and dry it is in June 2021. Lake Oroville is one of California’s largest reservoirs for storing water. It has shrunk substantially in 2021. Images via NASA

IN SUMMARY

Suffering severe drought, the state’s water board is poised to prevent thousands of growers and others from pumping water from the Sacramento and San Joaquin rivers. The state lost a lawsuit with irrigation districts during the last drought.

Drought-plagued California is poised to bar thousands of farmers, landowners and others from pumping water from the Sacramento-San Joaquin Delta watershed, a move that irrigation districts said exceeds the water board’s authority.

The emergency rules would be the first time state regulators have taken such wide-reaching action during a drought to prevent diversions from the massive Delta watershed stretching from Fresno to the Oregon border.

At a more than three-hour workshop today to discuss the proposal, State Water Resources Control Board officials said the status of the Delta was so severe that they had to take urgent

action. The board will vote on the regulation next week, and it could lead to formal curtailment orders as soon as August 16.

“We don’t take this action lightly,” Eileen Sobeck, executive director of the water board, said in a press briefing last week. “We know that it’s going to impose hardship on folks.”

During the last drought, in 2015, six irrigation districts serving growers sued the state over its efforts to stop some diversions from the Delta. A Superior Court judge ruled that the state violated their due process by failing to give them a “meaningful opportunity, including some form of public hearing, to challenge the board’s finding before they are ordered to curtail their water use.”

This time, state officials said they were giving ample notice and opportunity for input, including today’s virtual hearing and a warning issued last month, and said that with the Governor’s drought emergency declarations they were “on very firm legal footing.”

Representatives of irrigation districts serving growers did not say at the workshop whether they would file suit. But they told the state board that it does not have the authority to curtail the rights of users who have claims to the water that pre-date 1914 — the year California enacted its water rights law.

“The state water board should know that,” said Valerie Kincaid, a water law attorney who represents the San Joaquin Tributaries Authority, a coalition of irrigation districts and water agencies. “Curtailment requires providing water users due process before their water rights are taken. The same issue of due process arises here.”

Chris Scheuring, senior counsel for the California Farm Bureau, told CalMatters that it never rules out legal action to protect members, but said, “We are confident so far that the (water board) is well-equipped to deal with this year’s brutally dry conditions in an orderly manner. In fact, we are supportive.” The process “needs to be workable, fair and phased,” and based on “technically sound” analyses, Scheuring said.

At the hearing, California Farm Bureau representative Justin Fredrickson said the board needs to be realistic about people’s ability to understand and comply.

“What the board is attempting this year is really an experiment,” he said. “When you take it to the grand scale of something like the entire Bay-Delta watershed, it’s a tall order to expect perfection from the get go.”

A representative of the powerhouse Westlands Water District, which relies heavily on federal water supplies that flow through the Delta, voiced support for the water board’s regulations.

“Action is needed now, not only to adopt the regulations but to stop unlawful diversions,” said Jon Rubin, assistant general manager and general counsel.

If approved, roughly 5,700 of the 7,700 water users in the Delta watershed could be ordered to stop taking from the watershed. The exact number is expected to change based on the condition of the water supply. It includes even those with some of the highest-priority historic claims to the rivers and streams. Supplies for minimum human health and safety, such as drinking and household use, are not included.

The rivers are a major source of water for the Central Valley — but not their only source. Many growers in the region may also pump groundwater.

The Delta is the heart of California's water supply, pumping water through state and federal arteries to 25 million people and millions of acres of farmland. It's also home to iconic and endangered salmon and other fish species.

As extreme drought claims 85% of California, the dwindling river flows risk saltwater backwashing into the Delta from the Pacific. Keeping the saltwater at bay would protect the freshwater for drinking, farmers and fish — while preserving supplies stored in reservoirs for another dry year.

“If that were to reach the pumps at the state and federal water project, that's kind of like the doomsday scenario,” said Erik Ekdahl, deputy director of the water board's division of water rights.

Users who keep pumping could face fines of up to \$1,000 per day of violation, according to the proposed regulation.

The notices issued last month warned that the Delta watershed's supply was “insufficient” and “not lawfully available” to 4,300 so-called “junior” water rights holders whose claims on the watershed's rivers and streams date after 1914. Another 2,300 water users with more senior rights were warned that further action that could restrict their diversions could be coming their way, too.

Currently, compliance is considered voluntary. Less than 20% of the users responded to the notice by filling out a form telling the state whether they would stop diverting or would file for an exemption.

Enforcement is a laborious process requiring officials to prove without a doubt that there was insufficient water at the spot someone was caught pumping water.

Under the emergency rules, the water board can require growers and others to complete that form about whether they will stop diverting. . But enforcement will still be laborious — requiring that the board alert a water user to an inspection and then still catch them in the act. The water user has the right to appeal. But the burden of proof for the state would be lower than it is now.

“It’s essentially a question of, are you violating the regulation or not? Are you continuing to divert?” Ekdahl said.

Similar emergency rules have also been adopted for the Russian River watershed, with curtailments to be issued if Lake Mendocino levels drop below a certain level.

Environmentalists criticized the state for acting too slowly to preserve Delta water for next year and protect salmon and other endangered fish.

“The curtailments for water users tied to the Delta watershed are a hard reckoning. This is our climate reality and we cannot continue operating with the same water management plans of 50 years ago,” Barbara Barrigan-Parrilla, executive director of the environmental group Restore the Delta, said in a statement.

Too much water has already been pumped by the growers and other users, she said.

“In other words, it is more of the same. Too little, too late for protection of our rivers, the San Francisco Bay-Delta estuary, and everyday people in California.”

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Is desalination the answer to California's drought? Here's what experts say
ABC 7 News | July 28, 2021 | Juan Carlos Guerrero

<https://abc7news.com/california-drought-water-shortages-seawater-desalination-brackish/10900176/>



NEWARK, Calif. (KGO) -- As more communities impose water use restrictions because of the drought, the California Coastal Commission is likely to vote on a controversial proposal later this year that could ease water worries for millions of Orange County residents.

After decades of debate, Poseidon Water just needs approval from the commission to begin the construction of a desalination facility in Huntington Beach that would produce 50 million gallons of drinking water per day.

Poseidon Water already runs a desalination facility in Carlsbad which is the largest in the Western Hemisphere. The facility was built in 2015 and provides about 12% of the water used in San Diego County.

While desalination is not a new technology, it is controversial. Many communities have looked at desalination during times of drought but have been dissuaded by its cost and environmental impact.

Desalination is the process of converting seawater into drinking water by removing its salt content.

"The Pacific Ocean is the largest reservoir in the world. It's always full and we have the technology to turn that saltwater into drinking water," said Vice President for Project Development at Poseidon Water Scott Maloni.

Many countries have made big investments in desalination, especially in the Middle East.

Australia built several desalination plants during the "Millennium" drought but then shut many of them down when the drought ended. Several facilities are being restarted this year as drought conditions return.

California currently has 12 seawater desalination facilities in operation. The Huntington Beach proposal has the backing of Governor Gavin Newsom who said he wants to diversify the state's water supply.

But environmentalists have concerns.

"Seawater desalination is one option for California, but it's the most expensive option and it has significant energy and greenhouse gas impacts and it affects our marine environment," said the Director of Research at the Pacific Institute Heather Cooley.

Critics of desalination worry about the amount of energy needed to extract salt from seawater which is done by reverse osmosis.

That's a process that pushes water under high pressure through semi-permeable membranes effectively filtering out salts and minerals.

Historically, water has been cheap in California and that made desalination prohibitive. But that gap has narrowed as the cost of water has risen in the state.

The other concern is the environmental impact. While desalination can produce freshwater, it also generates brine, a highly concentrated salt water mixture that is then pumped back into the ocean.

The higher concentration of salt in the water can be damaging to marine life.

"When the water is discharged, it creates a plume around the discharge which is very salty. Even though marine organisms can handle salts, they do have a range in which they can handle it," said Cooley.

To minimize the impact, California adopted strict environmental regulations around desalination including the use of diffusers on the brine discharge so that it dissipates quicker in the ocean water.

But not all desalination treat seawater. A brackish desalination facility has been operating in Newark since 2003.

Brackish water contains a mixture of fresh water and saltwater. Since it is less salty than ocean water, it requires less energy to treat.

The Alameda County Water District built the Newark desalination facility to treat groundwater near the San Francisco Bay that had been contaminated with bay water.

Whereas before it would just pump out the saltier water, now it treats it and produces about 12 million gallons per day, or about 25% of the overall water supply for the southern Alameda County area.

"The facility has become especially important during drought conditions when we really need to rely on local supplies and local production," said Ed Stevenson, general manager of Alameda County Water District.

Running the facility requires much less energy than a seawater desalination plant would need. Any unused energy is sent back into the system. Stevenson said the overall cost of the facility is the lowest of all the water treatment plants operated by the district.

The brine produced is also handled differently. Since brackish water is already less salty than seawater, the resulting brine is also less salty, below the salt concentration of regular bay water. The concentrated stream is discharged at a location where the salt levels match the receiving water.

"With improvements in technology that are happening today and other advancements in water treatment, I think desalination will have a big part to play in the future of California and the West," said Stevenson.

In Antioch, which has dealt with water rationing in the past, construction is underway on a brackish water desalination facility that would be the first to operate in the Sacramento-San Joaquin Delta.

The Marin Municipal Water District is considering leasing two prepackaged desalination facilities from an Australian company to provide nearly a third of its drinking water needs.

Forecasts warn that Marin could run out of water by next summer if the drought does not improve this year.

"California water has been plentiful and cheap historically and now we're seeing with climate change that is no longer the case," said Maloni. "While seawater desalination was maybe not a viable option 20 years ago, it is today."

Environmentalists want to see more investment in conservation and efficiency.

"There are opportunities around storm water capture and water reuse," said Cooley. "So instead of discharging waste water into the ocean, you're now treating it again and using it to meet your water demand."

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